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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/678,093

10/06/2003

Isao Ota

111398.01

4464

25944 7590 03/07/2008

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EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

03/07/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/678,093	Applicant(s) OTA ET AL.	
	Examiner Michael A. Marcheschi	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 5-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 5-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/980685.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>9/13/07</u> . | 6) <input type="checkbox"/> Other: _____ |

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 is indefinite because it does not define any active method of using steps. How is it used to produce a glass hard disk platter?

Claims 1, 3 and 5-7 are rejected under 35 U.S.C. 103(a) obvious over Kasai et al. (343) in view of Yoshida et al. (118) and Khaladji et al. (697)

Kasai et al. (343) teach in column 6, lines 35-45, column 8, lines 28-64, column 9, lines 16-25, column 12, line 32 and the claims, a surface modified cerium (IV) oxide abrasive stable slurry (having the claimed concentration) for polishing a glass substrate which comprises cerium (IV) oxide (this is produced using the method defined in the reference) have the claimed size and surface area. The reference defines the claimed limitations of the cerium salt, both molar ratios, ammonium salt and use of a quaternary ammonium ion, as defined in claim 1, and well as, the limitations of claims 5 and 6.

Yoshida et al. (118) teaches in the abstract and column 6, line 42 that ceria polishing slurries are known to be used to polish magnetic discs. Column 6, line 31 and line 42 equates polishing semiconductors or magnetic glass discs with the ceria slurry.

Khaladji et al. teaches in the abstract and column 2, lines 42-44 that in ceria polishing slurries, it is advantageous to use a high purity starting material (cerium salt-this in turn will result in a highly pure cerium oxide).

Kasai et al. teaches polishing glass substrates (reads on the claimed material) with a surface modified cerium oxide abrasive slurry (claimed concentration of cerium oxide) by using cerium oxide having claimed size and surface area. In view of this, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, **182 U.S.P.Q. 549**; *In re Wertheim* **191 USPQ 90 (CCPA 1976)**. Although the limitation “glass hard disc platter” is not literally defined by this reference, the reference states that the composition is used to polish inorganic glass and quartz glass (column 9, lines 19-25) and it is the examiners position that this broadly reads on a “glass hard disc platter” since applicants do not show otherwise. In addition, the reference clearly states that glass articles can be polished with the composition and one skilled in the art would have appreciated this to include any glass article, including the claimed one, thus, the use of the ceria polishing slurry according to Kasai et al. to polish a glass hard disk platter (magnetic glass discs) would have been obvious to the skilled artisan motivated by Yoshida et al. teaching that ceria polishing slurries are known to be used to polish magnetic glass discs or semiconductor substrates. In view of this, Yoshida clearly implies that either substrate can be polished with a ceria slurry. The instant specification does not literally define what is meant by a “glass hard disc platter”, however, the specification refers

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to magnetic disc, thus it can be reasonably presumed that a glass hard disc platter is a glass magnetic disc absent evidence to the contrary.

Although the claimed cerium oxide/cerium oxide + other rare earth oxide ratio is not literally defined, it is the examiners position that since no other rare earth materials are defined as being present and/or no other rare earth is used in the process to make the cerium oxide, the amount of cerium oxide present is indirectly implied to be within the claimed range and applicants have not shown otherwise. In addition, the use of the ceria having a high purity (this implies that only cerium is present and no other oxides) would have been obvious to the skilled artisan motivated by Khaladji et al. teaching that it is advantageous to use a high purity starting material (cerium salt) when making ceria for polishing slurries. Although the purity is not defined for the ceria product, it can be reasonably presumed that the use of a highly pure starting material (cerium salt) will result in a highly pure cerium oxide (i.e. one that does not contain other rare earth oxide since the starting material is pure). In addition, a highly pure material will minimize the introduction of impurities (material other than cerium) during polishing, thus protecting the polished surface from said impurities which could adversely effect the polished surface.

Applicant's arguments filed 12/7/07 have been fully considered but they are not persuasive.

Before arguing the art rejections, applicants state that the instant specification in sections [0043], [0046], [0071] and [0073], as well as comparative example 1 coupled with the instant examples, discloses benefits for the claimed (cerium oxide/cerium oxide + other rare earth oxide)

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ratio. This is not persuasive because (1) the disclosure in sections [0043], [0046], [0071] and [0073] does not take the place of comparative evidence (i.e. no tangible evidence shown in terms of a comparison with the compositions according to Kasai et al. which discloses the claimed composition for use in polishing glass (i.e. polishing glass hard disk platter and cerium oxide ratio is clearly obvious-see above)) and (2) the comparative example only is based on a cerium oxide content of 57% which is much lower than the claimed lower limit thus the example is not commensurate in scope with the claims and does not clearly show criticality the claimed ratio.

Applicants argue that Kasai et al. does not teach a secondary particle size (does not disclose that the size defined is the secondary particle size) and explain the differences between primary and secondary sizes.

The examiner is well aware of the difference between a primary particle size and a secondary particle size. Although the reference does not literally state that the particle size is the secondary size, it is the examiners position that the size defined therein is in fact the secondary size and applicants have not shown any evidence to the contrary (burden is upon applicants to show the contrary). To support the examiners position, reference is made to column 1, line 68-column 2, line 2 of the reference which suggests that heating a cerium (IV) oxide hydrate in the presence of a salt produces agglomerates. Although this is defined in the background section, the Kasai et al. invention also heats ceric (cerium (IV)) oxide particles in water (cerium (IV) oxide hydrate) in the presence of a salt, thus it can be appreciated that agglomerates will be formed. In addition, the Kasai et al. reference makes the particles in the same manner as the claimed method, thus it can also be expected that the same particles will be produced in the reference because the same method is expected to yield the same particles.

In summary, burden is upon applicants to show that the size defined by the reference is not the secondary size.

Applicants also argue that the claimed range only encompasses 8% of the range defined by Kasai et al. This argument is not understood because the ranges still overlap.

Applicants appear to argue that Kasai et al. does not teach polishing glass hard disc platter. Although the limitation “glass hard disc platter” is not literally defined by this reference, the reference states that the composition is used to polish inorganic glass and quartz glass (column 9, lines 19-25) and it is the examiners position that this broadly reads on a “glass hard disc platter” since applicants do not show otherwise. In addition, one skilled in the art would have appreciated this to include any glass article, including the claimed one, because the use of the ceria polishing slurry according to Kasai et al. to polish magnetic glass discs would have been obvious to the skilled artisan motivated by Yoshida et al. teaching that ceria polishing slurries are known to be used to polish magnetic glass discs, as outlined above. The instant specification does not literally define what is meant by a “glass hard disc platter”, however, the specification refers to magnetic disc, thus it can be reasonably presumed that a glass hard disc platter is a glass magnetic disc absent evidence to the contrary. In as much as applicants argue the surface smoothness provided by the claimed slurry, this limitation is not claimed and therefore cannot be relied on to show patentability. In addition, since the same composition is used, it can be expected that the same result (surface smoothness) will be apparent because the use of the same composition will yield the same results absent clear evidence.

Applicants also state that another important property is the material itself (examiner assumes this to mean the cerium oxide slurry). The examiner is aware of this. They continue to

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argue that Kasai does not teach this factor. The examiner disagrees because this reference clearly teaches a cerium oxide slurry that meets the claimed limitations (as outlined in the rejection above, Kasai discloses the claimed composition and applicants provide no evidence showing the contrary or criticality commensurate in scope with the instant claims).

Applicants also argue that the claimed (cerium oxide/cerium oxide + other rare earth oxide) ratio is not defined by Kasai. Although not literally defined, it is the examiners position that since no other rare earth materials are defined as being present and/or no other rare earth is used in the process to make the cerium oxide, the amount of cerium oxide present is indirectly implied to be within the claimed range and applicants have not shown otherwise. In addition, the use of the ceria having a high purity (this implies that only cerium is present and no other oxides) would have been obvious to the skilled artisan motivated by Khaladji et al. teaching that it is advantageous to use a high purity starting material (cerium salt) when making ceria for polishing slurries. Although the purity is not defined for the ceria product, it can be reasonably presumed that the use of a highly pure starting material (cerium salt) will result in a highly pure cerium oxide (i.e. one that does not contain other rare earth oxide since the starting material is pure). In addition, a highly pure material will minimize the introduction of impurities (material other than cerium) during polishing, thus protecting the polished surface from said impurities which could adversely effect the polished surface. Applicants argue the comparative example defined in the instant specification but fail to establish any relationship between the commercially available cerium oxide of the comparative example and the reference cerium oxide. Is the cerium oxide of the comparative example the same as the cerium oxide used in Kasai et al.? Since no correlation

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is made, applicants have not compared the claimed invention with the reference teachings.

Finally, any evidence is the specification not commensurate in scope with the claims, as written.

Applicants state that absent express teachings of the claimed ratio, Kasai cannot teach or suggest these features. The examiner disagrees because (1) a teaching need not be express (i.e. literally defined) because the teachings can be implied which is the case in Kasai (i.e. it is the examiners position that since no other rare earth materials are defined as being present and/or no other rare earth is used in the process to make the cerium oxide, the amount of cerium oxide present is indirectly implied to be within the claimed range and applicants have not shown otherwise) and (2) the examiner stated reasons why the use of highly pure cerium oxide (i.e. highly pure means no or minimal impurities like other rare earths are present) is obvious and applicants have not clearly addressed this.

Applicant also argue that Kasai et al. does not teach the quaternary ammonium salt limitation. The examiner disagrees because Kasai et al. clearly teaches this in column 8, lines 45-50.

In as much as Yoshida et al. has been applied as a secondary reference, any argument that this reference does not teach a glass hard disc platter is not persuasive because the reference teaches that glass magnetic discs can be polished and the instant specification does not literally define what is meant by a "glass hard disc platter". The specification, however, refers to magnetic disc, thus it can be reasonably presumed that a glass hard disc platter is a glass magnetic disc absent evidence to the contrary.

Applicants also argue that Yoshida et al. does not teach the cerium oxide/cerium oxide + other rare earth oxide ratio of claim 1 and that Khaladji et al. does not teach the specific

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limitations of claim 1. With respect to the combination of the above references, applicants do not argue the examiners specific reasons for combining the references but appear to be arguing the references individually. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The secondary references have been applied for specific showings (as teaching references) that polishing the claimed substrate with a cerium oxide slurry of Kasai et al. is obvious and that the use of a highly pure cerium oxide materials as the cerium oxide used in Kasai is obvious. Applicants have not fully addressed these obviousness determinations.

Finally, applicants make a statement that “the references does not specifically teach or suggest the claimed limitations, and thus cannot have rendered those limitation obvious” (lines 19-20 on page 10 of the response). This is not a clear response against the examiners rejections because applicant do not point out the deficiencies in the rejection, and as outlined above, the combined references clearly teach the claimed method (using the claimed composition) and no evidence of criticality commensurate in scope with the instant claims is defined.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-12331233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Michael A Marcheschi/
Primary Examiner, Art Unit 1793